

***Environmental Assessment***  
***for the***  
***Construction of Eielson AFB Youth Center***  
***Eielson Air Force Base, Alaska***

354th Fighter Wing  
Eielson AFB Air Force Base, Alaska  
September 2010

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
and  
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)  
for the  
Construction of the Eielson AFB Youth Center  
Eielson Air Force Base, Alaska

**Introduction**

The US Air Force (USAF) is proposing to construct a youth center located on Eielson Air Force Base (AFB), Alaska. The youth facility would be a replacement to existing facilities which are undersized and outdated. Currently, the youth program occupies two different buildings separated ½ mile apart due to space limitations.

**Proposed Action**

The proposed Eielson AFB Youth Center would consist of a 17,000 square foot facility with an 8,000 square foot parking area. Approximately 7,000 cubic yards of soils would be disturbed and result in the loss of .57 acres of floodplain and associated vegetation. The facility would be located within 1,000 feet of Eielson AFB elementary, junior high, and high schools as well as the base residential area.

**Alternative 1**

This alternative would have the same building size as the Proposed Action, but would be located outside of the 100-year floodplain. This alternative would however be located in the industrial portion of the base and approximately 1.0 mile from the schools and base residential area. This alternative would require the construction of 1,500 feet of underground utilidor to supply utilities to the site. Approximately .35 acres of vegetation and 5,500 cubic yards of soils would be impacted with this alternative.

**No Action Alternative**

Under the No Action Alternative, there would be no changes or modifications to the existing youth facilities.

**Environmental Impacts of the Proposed Action**

Resources identified as significant during agency scoping include 100-year floodplain resources.

***Floodplain***

The Proposed Action would result in the loss of .57 acres of land located within the 100-year floodplain. Design of the building at this location would be in accordance with

Alaska's requirements and proposed building footprints would need to be elevated approximately 5 feet to meet state requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare; therefore, there would be no impacts. Should a 100-year flood event occur, Eielson AFB's Emergency Management element (354 CES/CEX) will notify building occupants and evacuate accordingly.

### ***Wetlands***

The Proposed Action will not impact wetlands because no wetlands were found in the footprint of the site.

### ***Biological Resources***

Impacts to biological resources from the Proposed Project are expected to result mainly from the loss of .57 acres of vegetation that will be removed for the footprint of the project. This vegetation provides habitat for a variety of small birds that use the shrubs and trees for nesting and brood-rearing. In most cases, the birds will be displaced to similar adjacent habitat.

### ***Threatened or Endangered Species***

The proposed project area is not suitable habitat for any of the threatened or endangered species occurring in the Alaskan interior.

### ***Historical or Cultural Resources***

Most archeological sites on Eielson AFB lands have been identified and mapped. The proposed project is not associated with any known sites. In the event that historic or cultural sites are discovered during project construction, activities will be halted and a professional archeologist will evaluate the find.

### ***Air Quality***

The Proposed Actions will have minor air quality impacts during construction due to fugitive dust and machinery exhaust. Such impacts will be highly localized and temporary in nature.

### **Best Management Practices (BMPs)**

Standard best management practices are discussed in the environmental assessment (EA) and have been incorporated into the project design to minimize impacts to the environment. These include using silt fences to prevent siltation of nearby wetland areas, avoiding construction during bird migration and nesting periods, and revegetating disturbed soils to prevent erosion.

### Public Comment

The Draft EA/FONPA and FONSI was made available for a 30-day public review and comment period through publication of a notice of availability which ran in the Fairbanks Daily Newsminer (posted 26 April 2009 and 3 May 2009). A copy of the Draft EA/FONPA and FONSI was made available for review at the Noel Wien Public Library in Fairbanks, Alaska. No public comment was received from the public noticing of the EA/FONPA and FONSI for this project.

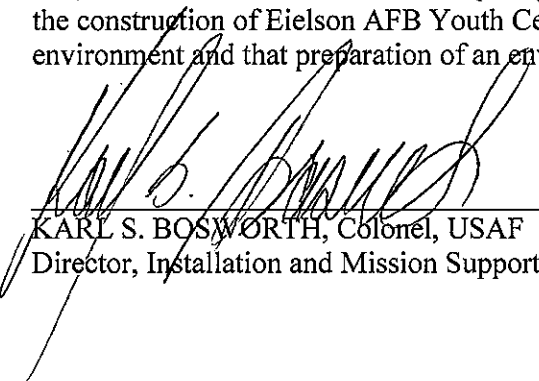
### Procedural Requirements

### Findings

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) implementing regulations for NEPA (40 CFR Part 1500-1508), and Air Force Instruction 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of a total 25,000 square foot youth facility (building and parking). This FONSI/FONPA has been developed pursuant to information provided in the accompanying EA.

**Finding Of No Practicable Alternative:** Eielson AFB is an Air Force facility that operates, maintains, and trains combat forces in close air support of military operations worldwide. Eielson AFB must have adequate recreational facilities available to base personnel as prescribed by the base's Integrated Natural Resource Management Plan (INRMP). Taking all the environmental, economic, safety, and other pertinent factors into account, pursuant to Executive Order 11988, and the authority vested in me by the Secretary of the Air Force Order 791.1, I find that there is no practicable alternative to the impacting of .57 acres of floodplains and that the Proposed Action includes all practical measures to minimize harm to the environment. This decision has been made after taking into account all submitted information and considering a full range of alternatives that are within the legal authority of the Air Force, and which would meet project requirements.

**Finding Of No Significant Impact:** Based on the accompanying EA which was conducted in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality, and Air Force Instructions, I conclude that the construction of Eielson AFB Youth Center will not result in significant impacts to the environment and that preparation of an environmental impact statement is not warranted.



KARL S. BOSWORTH, Colonel, USAF  
Director, Installation and Mission Support

30 SEP 10  
Date

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**Environmental Assessment  
for the  
Construction of the Eielson AFB Youth Center**

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## **1.0 Purpose and Need for Action**

Section 1.0 provides a description of the purpose and need for the Proposed Action.

### **1.1 Background and Objectives for the Proposed Action**

1.1.1 The 354th Fighter Wing (354 FW) is the host unit at Eielson Air Force Base (Eielson AFB) and is assigned to 11th Air Force (11 AF), headquartered at Elmendorf AFB near Anchorage. 11 AF falls under Pacific Air Forces, which is headquartered at Hickam AFB, Hawaii. The wing supports operations, maintenance, mission support, and medical group functions and is host to 10 tenant units.

1.1.2 The 354 FW operates F-16 Fighting Falcon aircraft. The 168th Air Refueling Wing (Air National Guard) is also based at Eielson AFB and currently flies KC-135 aircraft. Alaska ranges are the closest US-controlled tactical flying training areas available to Pacific Air Command Air Forces (PACAF) and US allies in the Pacific, thus large numbers of aircraft are frequently deployed to Eielson AFB to participate in joint/combined training and Major Flying Exercises (MFE).

1.1.3 Eielson AFB is typical of most Air Force bases in that the base infrastructure includes facilities to serve the residential and base community to include facilities such as schools, post office, commissary, community center, sports facilities, and youth facilities amongst others. Eielson AFB has a base population of approximately 5,000 people to include military and civilian employees.

1.1.4 Eielson AFB currently has youth facilities located next door to Crawford Elementary School, and across the street from Ben Eielson AFB Junior and Senior High School. Its programs provide a wide variety of constructive leisure-time activities for youths, ages 5 to 18. The center sponsors many athletic activities, including soccer, baseball, softball, t-ball, football, cheerleading, junior wrestling, and basketball. Instructional programs include gymnastics, ballet, acrobatics, piano, and karate. The center is also home to the Teen Center, which includes a snack bar open for lunch each day during the school year, from noon-5 p.m. It is estimated that approximately 200 youth per day utilize the facility.

1.1.5 The main youth facility was originally constructed in 1955 and was used as an open mess hall and has undergone numerous renovations since that time for maintenance reasons and to redesign the space for different use. In addition, due to overcrowding and space limitations of the main facility, the youth program requires the use of an additional building located approximately ½ mile away from main facility.

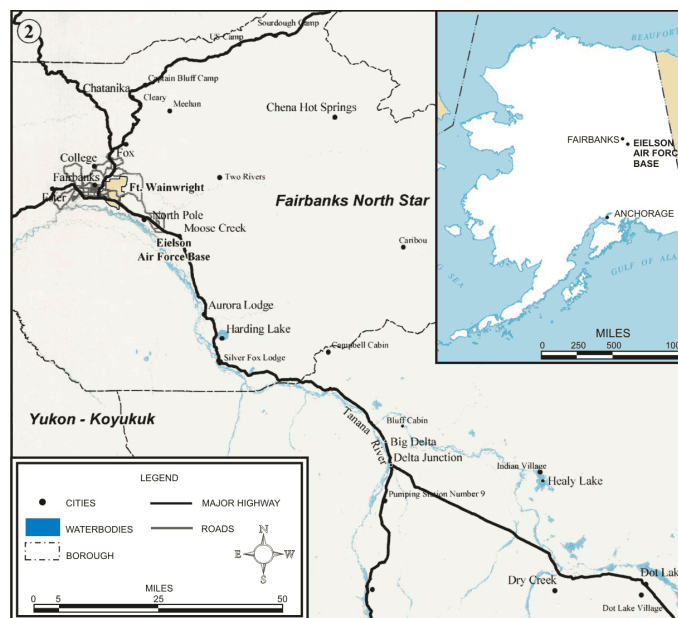
1.1.6 It is for these reasons that Eielson AFB proposes to construct a new Eielson AFB Youth Center. The new facility would consist of a 17,000 square foot facility that would house all of the functions in one building thus making the youth program more efficient, modern, and user friendly.

## 1.2 Location of the Proposed Action

1.2.1 Eielson AFB is located within the Fairbanks North Star Borough, approximately 120 miles south of the Arctic Circle and 23 miles southeast of Fairbanks (**Figure 1-1**). Eielson AFB is located in the Tanana River Valley on a low, relatively flat, floodplain terrace that is approximately 2 miles north of the active river channel. Other communities near Eielson AFB include Moose Creek to the north, and the Salcha area to the south of the base.

1.2.2 Base lands include 19,790 contiguous acres bounded on the west by the Richardson Highway and on the north and east by Army lands (Yukon Training Area). To the south, the community of Salcha borders Eielson AFB. The developed portion of Eielson AFB is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. In addition, more than 90 percent of the lands that constitute Eielson AFB were at one time wetlands and with a large portion of that, located within the 100-year floodplain. Of the remaining undeveloped portions of the base, 51 percent are wetlands. As a consequence, land planning and utilization of Eielson AFB lands becomes very difficult if one is to entirely avoid sitting facilities in wetlands and floodplains.

1.2.3 The Proposed Action would be located within the 100-year floodplain (**Figure 1-2**). A wetlands delineation conducted at the site concluded there would be no impact to wetlands under the Proposed Action.



**Figure 1-1 General Site Location**

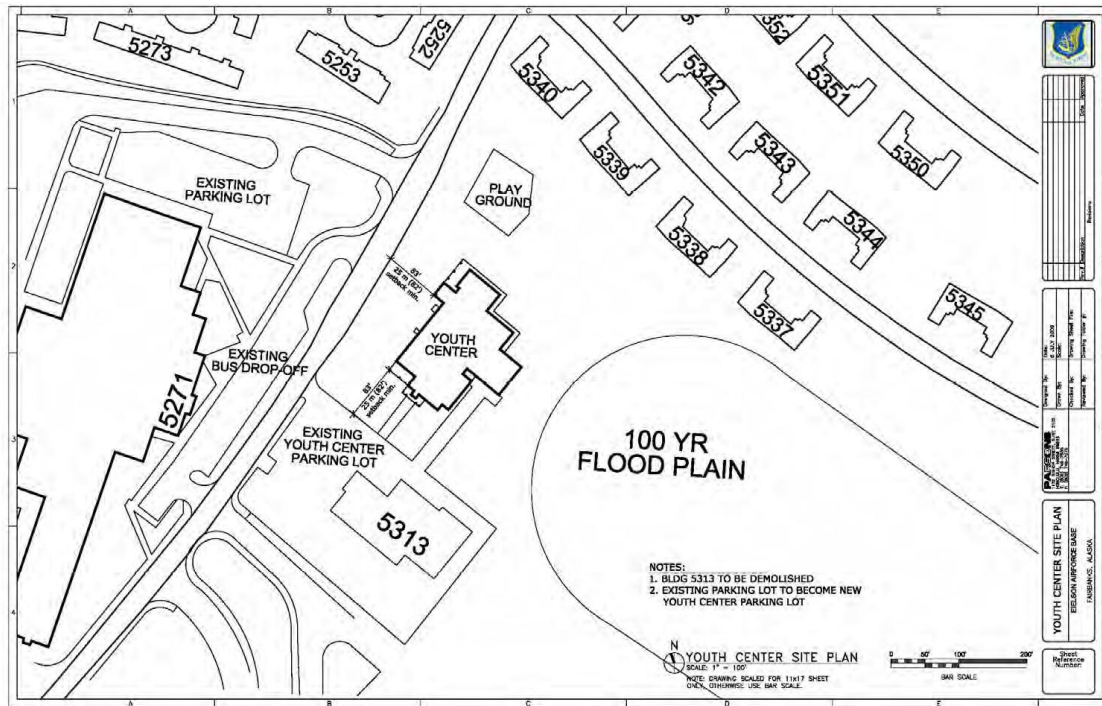


Figure 1-2 Floodplain Map

### 1.3 Decision to be Made and Decision Maker

1.3.1 As required by 32 Code of Federal Regulations (CFR) Part 989, the *Environmental Impact Analysis Process* will be used to determine what would be the potential environmental consequences of constructing the proposed Eielson AFB Youth Center. This EA is intended to satisfy these requirements. The Proposed Action and all alternatives considered will be addressed in detail in Section 2.0 of this document. A description of the resources associated with the areas affected by all alternatives is provided in Section 3.0 and the impacts that could result from each one are discussed in Section 4.0. Section 5.0 provides an analysis of cumulative impacts.

1.3.2 Based on the evaluation of impacts in the EA, a Finding of No Significant Impact (FONSI) will be published if there is a finding of no significant environmental impacts for the Proposed Action. If it is determined that the Proposed Action will have significant environmental impacts, other alternatives will be considered for which impacts may not reach the threshold of significance.

1.3.3 The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to the Pacific Air Forces Vice Commander (PACAF/CV), the decision maker, for review and consideration. If, based on a review by the decision maker of all pertinent information, a FONSI is proposed, a public notice will be published in accordance with 32 CFR 989.15(e)(2). The EA and the draft FONSI will be made available to interested agencies and the public. All interested parties will have 30 days to comment on the decision to the Air Force. If, at the end of the 30-day public

comment period, no substantive comments are received, the decision maker will sign the FONSI.

1.3.4 Two Executive Orders (EOs), 11988 (*Floodplain Management*) and 11990 (*Protection of Wetlands*), require the heads of federal agencies to find that there is no practicable alternative before the agency takes certain actions impacting wetlands or floodplains. The Proposed Action would impact the 100-year floodplain. There would be no impact to wetlands with the Proposed Action. To address this requirement the Secretary of the Air Force's designated agent, PACAF/CV will sign a document (FONPA) that addresses the issue of floodplains that may be associated with Air Force proposed actions. The FONPA will state which alternative, the Proposed Action, Alternative 1, or the No Action Alternative, will be selected as the appropriate course of action. The FONPA will be combined with the FONSI into one document. It will contain documentation that there is no practicable alternative to the Proposed Action and that all practical measures to minimize harm to floodplains have been incorporated into the project design. It will also state whether any required mitigation will be carried out.

#### **1.4 Project Scoping/Significant Issues**

1.4.1 This section provides a summary of all issues raised during the scoping process considered significant enough to be addressed in the EA. The scoping process typically involves meeting with potentially interested parties, including state and federal regulatory agencies that have oversight authority, and base groups that have responsibility for overseeing the development and operation of base facilities. As a result of soliciting input from agencies, several meetings were held to discuss issues associated with the project. The attendees list is found in Section 6.2. Issues raised in the scoping meeting are listed in this section and discussed in detail in Sections 2.0, 3.0, and 4.0.

1.4.2 *Floodplains*: Under the Proposed Action, the Eielson AFB Youth Center would be located within the 100-year floodplain.

#### **1.5 Federal and State Permits or Licenses Needed to Implement the Project**

There would be no Federal or State permits or licenses required for this project.

## 2.0 Description of the Proposed Action and Alternatives

Section 2.0 provides a description of alternatives considered to achieve the purpose and need described in Section 1.0. The Proposed Action, Alternative 1, and the No Action Alternative will be addressed. A summary of the environmental consequences for these alternatives will also be discussed.

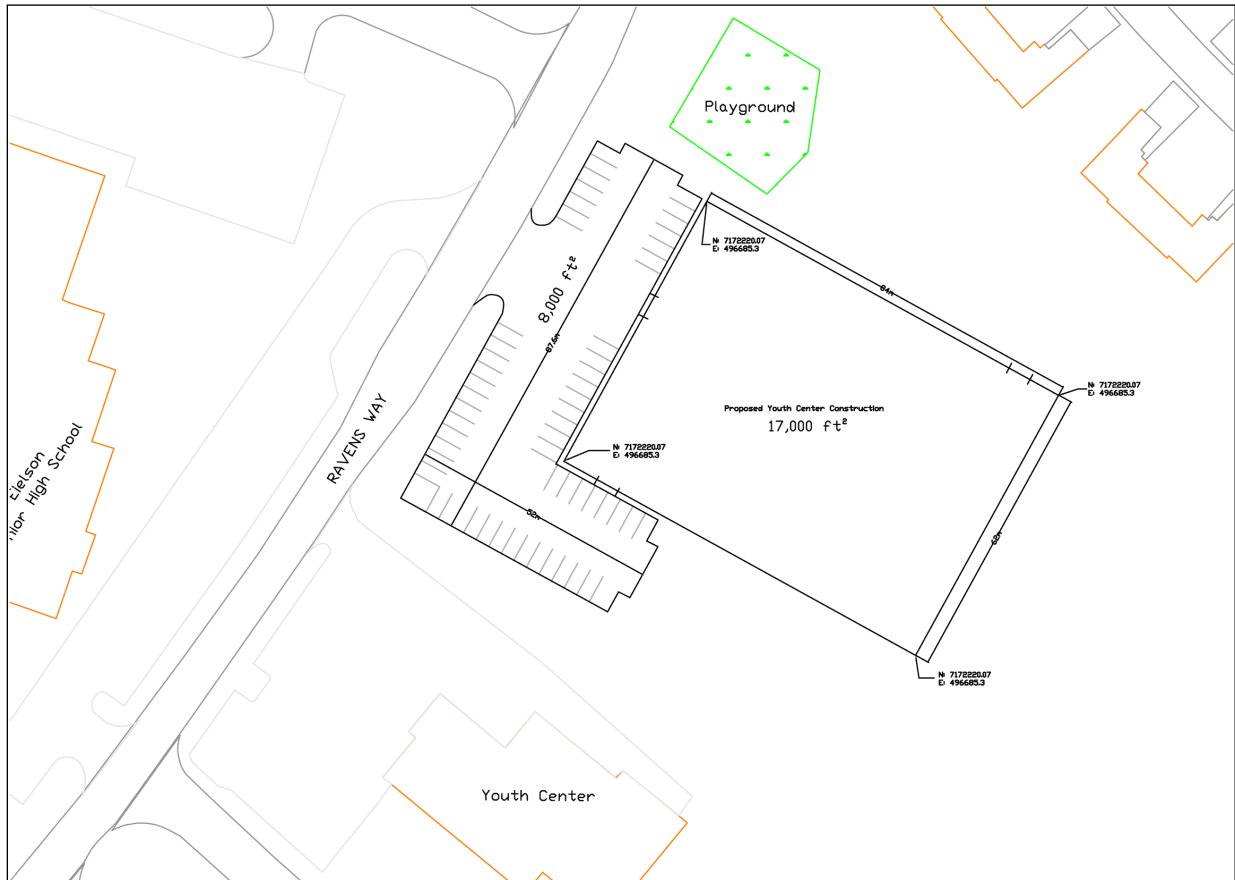
### 2.1 Proposed Action – Construction of Eielson AFB Youth Center

2.1.1 The USAF is proposing to construct a Youth Center facility that would combine the location and youth functions which currently are in two different buildings separated by a distance of  $\frac{1}{2}$  mile apart. The youth center building would be located within 1,000 feet of Eielson AFB elementary, junior high, and high schools as well as the base residential area, thereby providing ready access for predominant users of the facility. Currently, the main youth facility is located in the same proximity (**Figure 2-1, 2-2**).



Figure 2-1 Site Location

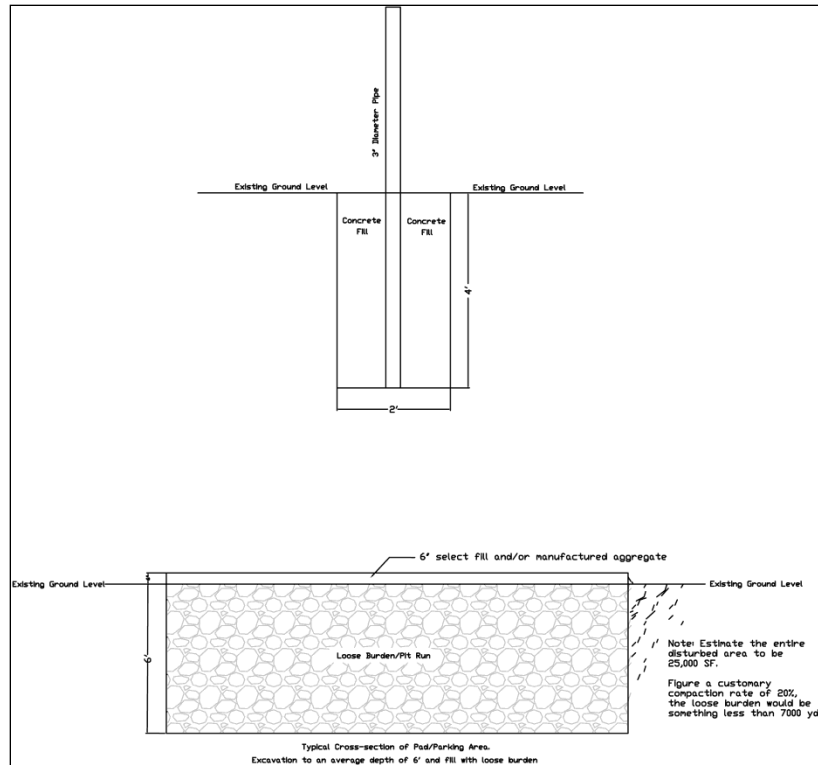
2.1.2 The proposed construction of the Eielson AFB Youth Center would consist of a 17,000 square foot facility with 8,000 square feet of surfaced parking for a total disturbance of approximately 25,000 square feet. The youth center would also incorporate a playground area into the design (**Figure 2-2**).



**Figure 2-2 Site Layout**

2.1.3 The proposed project would be constructed within the 100-year floodplain. The area is currently wooded and undeveloped. Construction of the youth facility would consist of removing native soils to 6 feet below ground surface and replacing with non-frost susceptible material (pit-run gravel). An estimated 7,000 cubic yards of soils would be disturbed with the construction of the youth center facility (**Figure 2-3**) and also result in the loss of approximately .57 acres of vegetation.

2.1.4 The proposed project would be completed in 2012 with construction beginning by late summer of 2011.



**Figure 2-3 Cross-section of Foundation**

2.1.5 Best management practices (BMPs) would be employed during construction to minimize impacts as follows:

- Use of silt fences and other construction techniques to prevent siltation into adjacent lands during construction;
- Culverts would be installed as needed to maintain natural drainage patterns of surface run-off;
- Construction would occur before May 1 or after July 15 to avoid potential disruption to nesting birds;
- Placement of temporary material storage piles within the 100-year floodplain during the rainy season and work excavation equipment from an upland would be avoided to minimize adding fill into waters of the U.S.; and
- There will be no equipment encroachment outside the project boundary.

## **2.2 Alternative 1 - Alternate Location for Youth Center**

2.2.1 Alternative 1 would provide an alternate location for the Eielson AFB Youth Center. Construction of a youth facility at this site would result in no impacts to wetlands or floodplains. The building would have similar design characteristics and employ the same BMPs as stated in the Proposed Action. Under Alternative 1, the Eielson AFB Youth Center would be located at the former Family Camp site (Figure 2-1). The site is

located approximately 1.0 mile from the Crawford Elementary School and Ben Eielson AFB Junior and Senior High School.

2.2.2 The site was formerly used for family camping and is semi-developed with a gravel pad and overhead power. Development of this site would require approximately 1,500 feet of extension of the underground utilidor system to provide additional utilities (water, wastewater, and condensate) to the facility.

2.2.3 Alternative 1 would result in the disturbance of approximately 5,500 cubic yards of soils, primarily as the result of the extension of the utilidor system. There would be a loss of approximately .35 acres of vegetation with this alternative.

### 2.3 No Action Alternative

Under the No Action Alternative, there would be no changes or modifications to the existing youth facility. The youth program would continue operating in the existing two buildings that they are currently occupying.

### 2.4 Other Alternatives Considered but Not Carried Forward for Analysis

Additional sites, as well as renovation of the existing Youth Center facility, were also considered on base, but were eliminated for further consideration based on distance away from schools, inability to provide services during renovation, and/or conflicts with future development in accordance with the Eielson AFB Master Plan.

### 2.5 Alternatives Impacts Matrix

**Table 2-5 - Alternative Impacts Matrix**

Resources	Proposed Action/Alternative 1	No Action Alternative
Soils	<b>Proposed Action</b> - Approximately 7,000 cubic yards of soils would be disturbed.  <b>Alternate 1</b> - Approximately 5,500 cubic yards of soils would be disturbed.	No disturbance to soils.
Air Quality	Minor, short-term impacts to air quality during construction phase from operation of heavy equipment.	No impacts to air quality.
Surface Water	No impacts to surface water would likely occur.	No impacts to surface water.
Groundwater	No impacts to groundwater.	No impacts to groundwater.

Infrastructure	<p>Construction of Youth Center would give needed increased space and combine all youth facilities under one roof.</p> <p><b>Proposed Action</b> - Location of facility would be in close proximity to users.</p> <p><b>Alternative 1</b> - Location of facility is 1.0 mile from schools and residential area. Youth would have to walk to facility thru</p>	Current youth facility would be utilized and overcrowding conditions continue.
Noise	Minor localized impacts from noise as a result of heavy equipment during the construction phase.	No impacts from noise.
Biological Resources - Plants	<p><b>Proposed Action</b> - Approximately .57 acres of vegetation would be disturbed with this alternative.</p> <p><b>Alternative 1</b> - Approximately .35 acres of vegetation would be disturbed with this alternative.</p>	No impacts to vegetation.
Biological Resources - Wildlife	Minor disturbance to birds possible, however, no construction would occur between May 1 and July 15. Other wildlife disturbance would be temporary during construction.	No impacts to wildlife.
Biological Resources - Fish	No impacts to fishery resources would likely occur.	No impacts to fish.
Wetlands	No impacts to wetlands.	No impacts to wetlands.
T & E Species	No impacts to threatened or endangered species would occur.	No impacts to threatened or endangered species would occur.
Floodplains	<p><b>Proposed Action</b> - Construction of Youth Center would result in impacts to approximately .57 acres of 100-year floodplain.</p> <p><b>Alternative 1</b> - No impacts to floodplains.</p>	No impacts to flood plains.
Subsistence	No impacts to subsistence activities would likely occur.	No impacts to subsistence activities.
Cultural Resources	No impacts to cultural resources would likely occur.	No impacts to cultural resources.
Socioeconomics	No impacts to human populations would occur.	No human population impacts.

Table 2-5 – Alternatives Impacts Matrix Cont.

### 3.0 Affected Environment

Section 3.0 describes the existing environment and resource components that would be impacted by the proposed project and any alternatives. The resources discussed in this section are presented as a baseline for comparisons of environmental consequences discussed in Section 4.0.

- Physical Resources, which include general site location, topography, geology, soils, climate, air quality, ground and surface water, and infrastructure improvements.
- Biological Resources, which includes vegetation, wildlife, fish, wetlands, and threatened or endangered species.
- Cultural Resources including Archeological and Historical Resources.
- Socioeconomic Factors.

### 3.1 Physical Resources

Eielson AFB encompasses approximately 19,790 acres and is isolated from major urban areas. The portion of Eielson AFB that contains the proposed project area lies on the abandoned floodplain of the Tanana River, with elevations ranging from 525 to 550 feet above Mean Sea Level (MSL). The surface of the floodplain is relatively smooth and slopes gently downward to the northwest at a gradient of about 6 feet per mile.

#### 3.1.1 Geology, Soils, and Permafrost

3.1.1.1 The geology of the area is classified as Precambrian and Paleozoic-age metamorphic rocks of the Yukon-Tanana crystalline complex, formally known as the Birch Creek Shist. The rocks have been intruded by igneous rocks of Mesozoic and Cenozoic age referred to as the Eielson AFB plutons. The igneous and metamorphic rocks have been overlain by younger sedimentary Pleistocene and Holocene loess deposits. These deposits originated from the floodplain of the Tanana River and the foothills of the Alaska Range. The loess varies in depth from a few inches on the ridge tops to 40 to 100 feet in the valleys.

3.1.1.2 Soils in the Tanana River Valley consist of unconsolidated silty sands and gravels, organic and sandy silts, and clays. Floodplain soils nearest the active channels are sandy with a thin silt loam layer on the surface. On higher terraces, the soils become predominately silt from the Salchaket series. Along older river terraces, silt loam soils, which contain significant organic components, often dominate. These soils tend to be cold and wet and are generally underlain by permafrost. Approximately two-thirds of Eielson AFB is covered with soils containing discontinuous permafrost. This preponderance of permafrost soils contributes to the large percentage of vegetated wetlands occurring on undeveloped base lands.

### 3.1.2 Floodplains

3.1.2.1 Floodplains are a predominate feature on Eielson AFB lands. The developed portion of Eielson AFB is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. Approximately 33 percent, or 6,444 acres, of Eielson AFB is designated as floodplain.

3.1.2.1 The Proposed Action would be located within the 100-year floodplain (**Figure 3-1**). Alternative 1 would not be located within the 100-year floodplain.



**Figure 3-1 Floodplain Aerial Photograph**

### 3.1.3 Climate

3.1.3.1 Eielson AFB has the northern continental climate of Interior Alaska, which is characterized by short, moderate summers, long cold winters, and low precipitation and humidity. The mean annual precipitation in the area is 11.2 inches, much of which comes as snow. The coldest month is January, with an average temperature of minus 10.3°F and an average minimum temperature of minus 19.2°F; the warmest month is July, with an average temperature of 61.7°F and an average maximum of 71.9°F. The minimum amount of daylight is shortest in December with 3 hours 47 minutes of available daylight.

3.1.3.2 May and June have the highest winds, with average wind speeds of 7.7 and 7.2 miles per hour, respectively. During most of the year, the prevailing wind direction is from the north at an average of 5.15 miles per hour. However, in June and July, the wind direction is typically from the southwest.

### **3.1.4 Air Quality**

3.1.4.1 Air quality is generally good at Eielson AFB. The Fairbanks North Star Borough is in attainment for carbon monoxide (with a maintenance designation), but is in non-attainment for PM<sub>2.5</sub>. The Proposed Action is outside the non-attainment boundary for PM<sub>2.5</sub>. The Clean Air Act designates areas as attainment, non-attainment, maintenance, or unclassified with respect to national ambient air quality standards (NAAQS). Non-attainment areas are locales that have recently violated one or more of the NAAQS and must satisfy the requirements of State or Federal Implementation Plans (SIPs or FIPs) to bring them back into conformity with the applicable air quality standards. Significant temperature inversions during winter, coupled with low winds and a restricted geographic basin often serve to concentrate air pollutants in the Fairbanks-North Pole area. Pollutants of concern include carbon monoxide, emitted primarily from motor vehicles, and particulates, which are the result of combustion of a variety of fossil fuel types. Major particulate emission sources include coal burning power plants, residential wood stoves, forest fires, vehicle emissions, and road dust.

3.1.4.2 Emissions sources on Eielson AFB are operated in accordance with state Air Quality Control regulations and include operating permits and operational limits.

3.1.4.3 As required by Section 18 Alaska Administrative Code (AAC) 50.045(d), compliance with the Eielson AFB Fugitive Dust Emission Plan will include:

Fugitive dust emissions (airborne dust generated by vehicles operating on unpaved surfaces, transfer or transport of dust producing materials, soil stockpiling, etc.) shall be controlled at the construction site, along haul routes, and at staging areas. Water spraying shall be conducted as necessary, determined by contracting officer, to minimize fugitive dust generation. Limit traffic speeds on all unpaved road surfaces to 15 mph. Any uncontaminated dirt or mud, which is tracked onto paved roadways, shall be cleaned away that day. Depending on conditions, the roadway will be watered before cleaning or if a street sweeper is used, it will have a water system that controls dust around the sweeper during operation

### **3.1.5 Ground and Surface Water**

3.1.5.1 Eielson AFB is located over a shallow unconfined aquifer. The aquifer is approximately 250 feet thick, extends to bedrock, and has a regional gradient of about 5 feet per mile flowing to the north-northwest. The water table varies from the surface in adjacent wetlands to 10 feet below ground level in developed areas. The base uses the local aquifer for its drinking water and monitors groundwater quality in a number of locations as part of its Installation Restoration Program. Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson AFB is good.

3.1.5.2 Aquatic bodies on Eielson AFB include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (11 are man-

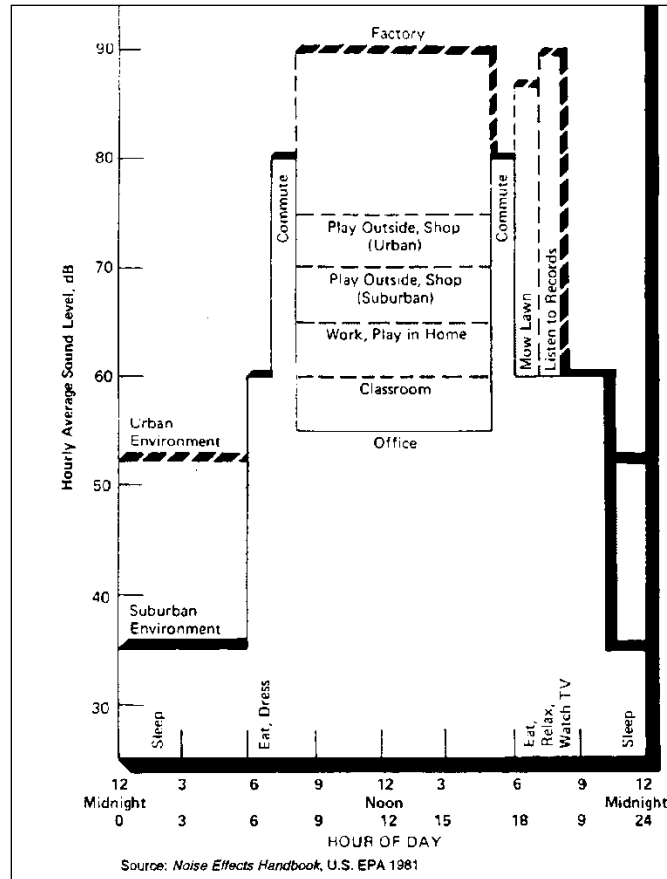
made); 80 ponds (10 are naturally-occurring and 70 man-made) totaling 560 acres. There are 6,770 acres of land within the 100-year floodplain on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on base.

3.1.5.3 Approximately 51 percent, or 10,133 acres, of Eielson AFB is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams. Wetlands and low gradient alluvial streams comprise most of the surface water resources on Eielson AFB, with wetlands dominating the low-lying areas within and surrounding the installation. Most wetland areas were created as a result of surface waters becoming trapped in the thawed layer over the permanently frozen subsurface (permafrost). Flood periods tend to occur during spring snowmelt and during the middle to late summer, when heavy rains or warm air quickly brings glacier fed mountain streams to flood capacity. Several lakes and extensive wetlands surround the airfield in the cantonment area. Among these are Bear, Polaris, Moose, Hidden, Pike, Rainbow, Scout, Grayling, and Tar Kettle lakes. Creeks that can be found in the vicinity of the airfield include French and Moose creeks.

3.1.5.4 Piledriver and Garrison sloughs are the two largest streams in the vicinity of the airfield. Piledriver Slough, which discharges into the Tanana River, is located along the western edge of Eielson AFB and approximately 4,000 feet west of the airfield and parallel to the runways. Approximately 12 miles of Piledriver Slough occurs on Eielson AFB lands. The slough receives no runoff from the urban developed area of the base and has good water quality.

### 3.1.6 Noise

Aircraft generate by far the most noise on Eielson AFB. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flight line; however, the decibel level drops off to a maximum of 70-dB in the closest residential area, Moose Creek, just north of the base. A 65-dB level is not recommended for housing areas by EPA standards (Noise Effects Handbook, US EPA, 1981). Construction noise is potentially another source of noise, but it is not considered to be a concern due to its temporary nature and relatively low dB level. **Figure 3-2** is a chart that provides a scale of noise levels associated with typical daily activities.



**Figure 3-2 Noise Levels**

### 3.1.7 Infrastructure Improvements

The infrastructure improvements found adjacent to the Proposed Action area generally consist of surfaced roads, underground utilities (water, wastewater, and condensate). Improvements at the Alternative 1 site include a gravel pad and overhead power.

## 3.2 Biological Resources

### 3.2.1 Vegetation

3.2.1.1 The vegetation of the Tanana River Valley in the vicinity of Eielson AFB is typical of boreal forest or taiga habitats. The boreal forests of Eielson AFB are predominantly evergreen forests dominated by black spruce and white spruce (*Picea glauca*), but also include extensive stands of deciduous forests containing paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), and balsam poplar (*P. balsamifera*). Extensive areas of shrub and herbaceous vegetation are found in wetlands, lowland areas, and the active floodplain, and are dominated by willows and other shrubs, sedges, and grasses. Bog areas are dominated by black spruce stands intermixed with peat moss (*Sphagnum* spp.) and cotton grass (*Eriophorum vaginatum*).

3.2.1.2 The northern boreal forest of Interior Alaska is a fire dependent ecosystem. It is a mosaic of vegetation types made up of a few primary species of wide ecological amplitude that respond to specific combinations of physical site characteristics. These characteristics are mainly topographical and include slope and aspect and other physical characteristics such as microclimate, soil temperature, and moisture regimes. These in turn influence the type of vegetation that will be found there.

3.2.1.3 The plant community associated with the Proposed Action consists primarily of aspen, willow, black spruce, birch, and shrubs (**Photo 3-1**). The plant community associated with the Alternative 1 consists primarily of aspen, birch, and grasses.



**Photo 3-1 Site Vegetation**

### **3.2.2 Wetlands**

Wetlands are a predominant physical feature of Eielson AFB lands. For the most part, the developed portion of the base, and portions of the elevated hills to the east, are classified as uplands. However, some portions of the developed area of the base, as well as major portions of the undeveloped areas, are designated Section 404 wetlands by the Corps of Engineers. Based on current delineation figures for wetlands on Eielson AFB, 51 percent of the undeveloped portion of the base are wetlands. This includes 10,133 acres of vegetated wetlands and 723 acres of lakes, ponds, and streams.

### **3.2.3 Wildlife Resources**

3.2.3.1 The surrounding Tanana Valley provides breeding habitat for a wide variety of migratory bird species. Bird species found on Eielson AFB include spruce grouse (*Dendragapus canadensis*), ruffed grouse (*Bonasa umbellus*), northern goshawk (*Accipiter gentilis*), sharp-shinned hawk (*A. striatus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). During winter, willow ptarmigan (*Lagopus lagopus*) and rock ptarmigan (*L. mutus*) are common on Eielson AFB. Over 20 species of waterfowl, including geese, ducks, loons, grebes, and scoters use aquatic habitats on the installation.

3.2.3.2 There are 32 species of mammals found on Eielson AFB. Common species include moose (*Alces alces*), black bear (*Ursus americanus*), grizzly bear (*U. arctos*), snowshoe hare (*Lepus americanus*), marten (*Martes americana*), red squirrel (*Tamiasciurus hudsonicus*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), meadow vole (*Microtus pennsylvanicus*), red-back vole (*Clethrionomys rutilus*), and meadow jumping mice (*Zapus hudsonius*).

### 3.2.4 Aquatic/Fishery Resources

3.2.4.1 Lakes and streams on Eielson AFB contain both native fish and fish stocked by the Alaska Department of Fish and Game. Native fish found in the Tanana River drainage include chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), silver salmon (*Oncorhynchus kisutch*), burbot (*Lota lota*), arctic grayling (*Thymallus arcticus*), northern pike (*Esox lucius*), chub (*Semotilus* spp.), several species of whitefish (*Coregonus* spp.), sheefish (*Stenodus leucichthys nelma*), rainbow trout (*Oncorhynchus mykiss*), and arctic char (*Salvelinus alpinus*).

3.2.4.2 The Alaska Department of Fish and Game stocks six lakes and one stream on Eielson AFB: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, and Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game includes rainbow trout, arctic grayling, arctic char, silver salmon, Chinook salmon, chum salmon, and northern pike.

### 3.2.5 Threatened and Endangered Species

No threatened or endangered species, as designated by the US Fish and Wildlife Service (USFWS), typically occur in any of the project areas included in the two action alternatives. This was the conclusion of an Eielson AFB contract study entitled *Biological Survey, Final Report 1994*, that addressed the potential for the presence of endangered species on base lands. As of 2009, the USFWS has not listed any new federal species or critical habitat that may occur on Eielson AFB or its training lands. The State of Alaska has not listed any new threatened or endangered species that may occur on Eielson AFB or its training lands. Should any threatened or endangered species become resident to Eielson managed lands, consultation with USFWS will be initiated (R. Gunderson, personal communication, April 14, 2010).

### 3.3 Cultural and Historic Resources

In 1994, Eielson AFB contracted for the preparation of a predictive model for the discovery of prehistoric cultural resources on base lands. The predictive model was then used to conduct an evaluation of cultural resources on Eielson AFB as required by Section 110 of the National Historic Preservation Act. The areas associated with the Proposed Action and Alternative 1 has been determined to not contain cultural or

archeological resources. In the event that during project excavation/construction any cultural resources were encountered, activities would cease until the resources were evaluated.

### **3.4 Recreational Resources**

3.4.1 Recreation within Eielson AFB managed lands includes hunting, trapping, off-road vehicle use, snowmobile use, and fishing.

### **3.5 Socioeconomic Factors and Environmental Justice**

The area surrounding the proposed project is utilized primarily by the military to support the military function. The construction of the proposed Eielson AFB Youth Center is not located near any population centers that are disproportionately inhabited by minorities or low income groups.

## 4.0 Environmental Consequences

Section 4 is organized by resources, with the environmental consequences evaluated for each alternative. This discussion will provide a scientific and analytic basis for the comparisons of the alternatives and describes the probable consequences (impacts and effects) of each alternative on selected environmental resources.

### 4.1 Physical Resources

#### 4.1.1 Geology, Soils, and Permafrost

4.1.1.1 *Proposed Action*: Construction of the project at the proposed location would alter the physical environment mainly by the excavation of frost susceptible (silts and clays) in the footprint of the proposed building and parking lot. The excavated material would be stockpiled and eventually disposed of at an acceptable site. A layer of aggregate soils would be laid in place of the removed silts and clays. Approximately 7,000 cubic yards of soils would be disturbed with the Proposed Action, resulting in minor impact to soils. Exposed soils within the project area will be revegetated to minimize soil erosion.

4.1.1.2 *Alternative 1*: Alternative 1 would result in minor disturbance to soils primarily through the excavation of soils for extension of the utilidor system. Non-native soils at the building site would also be disturbed during construction. Approximately 5,500 cubic yards of soils would be disturbed with Alternative 1. Exposed soils within the project area will be revegetated to minimize soil erosion.

4.1.1.3 *No Action Alternative*: There would be no impacts to soils from this alternative.

#### 4.1.2 Floodplains

4.1.2.1 *Proposed Action*: The Proposed Action would result in the loss of .57 acres of land located within the 100-year floodplain. Design of the building at this location would be in accordance with Alaska's requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare; therefore, there would be no impacts.. Should a 100-year flood event occur, Eielson AFB's Emergency Management element (354 CES/CEX) will notify building occupants and evacuate accordingly.

4.1.2.2 *Alternative 1*: There would be no impacts to floodplains from this alternative.

4.1.2.3 *No Action Alternative*: There would be no impacts to floodplains from this alternative.

#### 4.1.3 Climate

There would be no impacts to climate under any of the alternatives.

#### **4.1.4 Air Quality**

4.1.4.1 *Proposed Action*: Some minor, short-term impacts from emissions associated with the operation of construction machinery would result from the Proposed Action.

4.1.4.2 *Alternative 1*: Impacts to air quality from this alternative would be similar to those for the Proposed Action.

4.1.4.3 *No action alternative*: No impacts to air quality would result from this alternative.

#### **4.1.5 Ground and Surface Water**

4.1.5.1 *Proposed Action*: There would be no impacts to groundwater with the construction of the youth facility and few if any impacts to surface waters. During building construction, minor localized siltation could occur, however, silt fences would be used to minimize siltation. In addition, culverts would be installed as required to maintain natural drainage patterns.

4.1.5.2 *Alternative 1*: Impacts to groundwater and surface water for this alternative would be similar to the Proposed Action.

4.1.5.3 *No action alternative*: No impacts to ground or surface waters would result from this alternative.

#### **4.1.6 Noise**

4.1.6.1 *Proposed Action*: Noise impacts associated with implementation of this action would be short-term and relatively low decibel compared to ambient noise levels that occur with nearby flight line aircraft operations. Noise would be associated with operation of heavy equipment, and would last only for the duration of the summer construction season.

4.1.6.2 *Alternative 1*: Noise impacts for this alternative would be similar to the Proposed Action.

4.1.6.3 *No Action Alternative*: There would be no noise impacts associated with this alternative.

#### **4.1.7 Infrastructure Improvements**

4.1.7.1 *Proposed Action*: Implementation of the Proposed Action would result in a larger youth facility that would allow the youth program at Eielson AFB to consolidate functions under one roof, resulting in a more cohesive and efficient operation. Proximity to residential area and schools would remain unchanged.

4.1.7.2 *Alternative 1*: Infrastructure improvements would be similar to Proposed Action, however, the youth facility would be located approximately 1.0 mile from residential area and schools necessitating youth to cross the industrial portion of the base to access the facility.

4.1.7.3 *No Action Alternative*: There would be no changes to the existing infrastructure with this alternative. The youth program would continue to operate in two different buildings and overcrowded conditions are expected to remain.

## **4.2 Biological Resources**

### **4.2.1 Vegetation**

4.2.1.1 *Proposed Action*: The Proposed Action would result in the loss of .57 acres of vegetation consisting primarily of deciduous trees and shrubs resulting in minor impacts.

4.2.1.2 *Alternative 1*: Approximately .35 acres of vegetation consisting primarily of deciduous trees and grasses would be disturbed with this alternative resulting in minor impacts.

4.2.1.3 *No Action Alternative*: No impacts to vegetation would result from this alternative.

### **4.2.2 Wetlands**

Tom Slater, Natural Resources specialist for Eielson AFB, conducted a site inspection at the proposed project site and documented that no wetland permits are needed at the site. There would be no impacts to wetlands with the Proposed Action or alternatives because wetlands have been not identified in those areas (T. Slater, memorandum, 20 April 2010).

### **4.2.3 Aquatic/Fishery Resources**

There would be no impacts to fish or other aquatic resources with the Proposed Action or alternatives.

### **4.2.4 Wildlife Resources**

4.2.4.1 *Proposed Action and Alternative 1*: In interior Alaska, the U.S. Fish and Wildlife Service has designated primary migratory bird breeding and nesting season to be between May 1 and July 15 (*The Integrated Natural Resource Management Plan (INRMP) 2003-2008*). No project activity would occur from May 1 or after July 15 to avoid impacts to migratory and nesting birds. Construction personnel would also adhere to Migratory Bird Treaty Act guidelines for the duration of the project.

4.2.4.2 *Proposed Action and Alternative 1*: Selection of one of these actions would result in the loss of a small amount of bird habitat with the clearing of the vegetation. There may be the possibility of minor disruptions to wildlife movement in the area during

construction phase. Increased activities such as operation of heavy equipment could result in temporary displacement of wildlife. However, these impacts would be limited in duration and scope.

4.2.4.3 *No Action Alternative*: No impacts to wildlife resources would occur with this alternative.

#### **4.2.5 Threatened and Endangered Species**

No impacts to threatened and endangered species will result from any of the alternatives considered in this EA.

#### **4.3 Cultural and Historic Resources**

No impacts to cultural resources would likely result from the Proposed Action or alternative 1 as cultural resources on base lands have been fairly well surveyed. Under any circumstances where cultural resources were discovered on base lands, all activities would cease until a cultural resource specialist evaluated the find. No impacts to cultural resources would occur from the No Action Alternative.

#### **4.4 Recreational Resources**

No impacts to recreational resources will result from any of the alternatives considered in this EA.

#### **4.5 Socioeconomic Factors and Environmental Justice**

4.5.1 Environmental justice, as it pertains to the NEPA process, requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. To accomplish these requirements the Air Force must conduct an environmental justice analysis of potential impacts that may result from the Proposed Actions.

4.5.2 The site of the proposed project is located on federal lands designated for military operations. The closest residential area to this site is Moose Creek, approximately 5 miles to the northwest. This residential area does not exhibit characteristics of low-income or minority populations that are not exhibited in the Fairbanks area population as a whole. Similarly, no native claims or allotments are located within a 10-mile radius of the project area. Based on the environmental impacts identified in this EA and on a corresponding environmental justice analysis, it is felt that no disproportionate impact to minority or low-income populations would occur from implementation of this project.

#### 4.6 Unavoidable Adverse Impacts

**Table 4-6 - Unavoidable Adverse Impacts**

<b>Action</b>	<b>Unavoidable Adverse Impact</b>	<b>Cumulative Effect</b>
Proposed Action	Building construction will result in loss of .57 acres of floodplain and disturb 7,000 cubic yards of native soils. Site clearing will result in loss of .57 acres of upland vegetation.	Cumulative actions are anticipated to result in minor impacts on geologic resources, particularly floodplain and soils. Proposed Action would make negligible adverse contribution.
Alternative 1	Building construction will disturb 5,500 cubic yards of native soils. Site clearing will result in loss of .35 acres of upland vegetation.	Cumulative actions are anticipated to result in minor, adverse impacts on geologic resources, particularly soils. Alternative 1 would make negligible adverse contribution.
No Action Alternative	There would be no unavoidable adverse impacts associated with this alternative.	None

#### 4.7 Best Management Practices (BMPs) and Mitigation

The project design for the proposed construction of the Eielson AFB Youth Center would incorporate best management practices that are designed to mitigate impacts to the environment. Design aspects include:

- Filter fabric would be placed on ground surface prior to placement of gravel fill;
- Use of silt fences and other construction techniques to prevent siltation into adjacent wetlands during construction;
- Culverts would be installed as needed to maintain natural drainage patterns of surface run-off;
- Construction would occur before May1 and after July 15 to avoid potential disruption to migratory and nesting birds.
- There will be no equipment encroachment outside the project boundary; and
- In the event any signs of cultural or historic resources were encountered during construction, the cultural resource specialist would be notified immediately and all activities would cease until a professional archeologist evaluated the finding.

## **5.0 Cumulative Impacts and Irreversible and Irretrievable Commitments of Resources**

### **5.1 Cumulative Impacts**

The National Environmental Policy Act (NEPA) process requires that the issue of cumulative impacts be addressed in an environmental assessment.

5.1.1 The Council on Environmental Quality (CEQ) has stated in their NEPA regulations (1508.7) that: *“Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions. . .”* and *“. . .can result from individually minor, but collectively significant actions taking place over a period of time.”*

5.1.2 Other future actions in the region were evaluated to determine whether cumulative environmental impacts could result due to the construction of the youth center in conjunction with other past, present, or reasonably foreseeable future actions. None of the future activities are anticipated to result in cumulative impacts when added to potential impacts of the Proposed Project or Alternative 1.

5.1.3 Furthermore, cumulative impacts with regard to occupational health would be minor due to short-term risks associated with construction activity; however, the Proposed Project and Alternative 1 would be required to adhere with appropriate regulations and BMPs to minimize these risks. Neither project will result in cumulatively significant impacts to the environment on Eielson AFB lands.

### **5.2 Irreversible and Irretrievable Commitments of Resources**

The NEPA CEQ regulations require environmental analyses to identify “...any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented” (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) which cannot be replaced within a reasonable time frame. Building construction material such as gravel and the gasoline usage for construction equipment would constitute the consumption of nonrenewable resources. These resources are currently plentiful and the amount of these resources required by this project would be minimal. Irreversible resource commitments associated with the Proposed Action is the loss of .57 acres of 100-year floodplain and associated vegetation that will be impacted from building construction.

## 6.0 Glossary

Alluvial - Sediment deposited by flowing water.

Environmental Impact Analysis Process (EIAP) - is a set of guidelines (Air Force Instruction 32-7061) that the Air Force uses to comply with the NEPA process.

Decibel - A unit of measurement for describing sound intensity.

Executive Order 11988 - Mandate to federal agencies to follow the NEPA process to ensure the protection of floodplains.

Executive Order 11990 - Mandate to federal agencies to follow the NEPA process to ensure the protection of wetlands.

Habitat - The area or environment in which an organism or ecological community normally occurs.

Mean Sea Level (MSL) - The average surface level for all stages of the tide over a 19-year period, usually determined from hourly height readings from a fixed reference point.

National Environmental Policy Act (NEPA) - Legislation enacted in 1969 mandating that all federal agencies assess the environmental impacts of actions which may have an impact on man's environment.

National Historic Preservation Act - Federal mandate that requires the preservation of prehistoric and historic sites.

Non-Attainment Area - An area exceeding National Ambient Air Quality Standards for one or more criteria pollutants.

Permafrost - Permanently frozen subsoil occurring in perennially frigid areas.

SAFO 780-1 - Secretary of the Air Force Order and reference number.

Seasonally Persistent - Persistence is based on historical records and field evidence that indicates an area is seasonally inundated with water during non-frozen (spring/summer) portions of the year.

Upland - An area of land of higher elevation, often used as the opposite of a wetland.

Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

404 Wetland - Wetland areas that have been determined “waters of the United States” and thus subject to Section 404 wetland permitting guidelines administered by the Army Corps of Engineers and the US Environmental Protection Agency.

100-Year Floodplain - Based on historical evidence, there is a high probability that the area within the 100-year floodplain will be flooded once every 100 years.

### 6.1 List of Preparers

Lyle D. Gresehover wrote all sections of this EA. Lyle has 18 years of experience in environmental science and natural resource management.

Ruth B. Forrester edited portions of this EA. Ruth has 6 years of experience in environmental planning, environmental baseline surveys, industrial hygiene, and environmental consulting.

### 6.2 Scoping Participants

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